

ON THE DEVIATIONS OF COMPASSES PRODUCED BY THE IRON IN SHIPS.

The following paper was read by the Rev. William Scott, at the monthly meeting of the Philosophical Society of New South Wales, on the evening of Wednesday, the 17th October, Sir Charles Nicholson, Bart., in the chair:—

This paper was drawn up under the following circumstances:—Some short time since, I heard of a great surprise, that it was customary for the numerous steamers, to go to sea without any adjustment of their compasses, or determination of their compass errors. I immediately inserted a letter in the Sydney Herald, calling public attention to this circumstance, pointing out the danger of such a course, and the facility with which the errors of compasses may be determined.

This led to the appearance of a letter from Mr. R. Thompson, in which he pointed out that he had previously called attention to the same subject, and to the invention of an instrument by Mr. Pinney, an officer in the R. and O. Company's service, whereby the errors of a compass may be determined at sea. Having made myself acquainted with the nature of Mr. Pinney's invention, I sent a short notice of it to the Herald, at the same time stating my intention to return to the subject at greater length hereafter.

In preparing to carry out this intention, it occurred to me that the subject was well worthy of discussion at a meeting of the Philosophical Society, although the remarks I had to make must be considered rather as a completion than as an original paper.

The object of this paper then, is to state briefly the present state of the theory of compass deviations—the steps by which it has arrived at that state, and the various contrivances that have been proposed and adopted, with a view to the correction or determination of such deviations.

I may mention that some years since my attention was directed to this subject by an ingenious friend who spent much time and money in unsuccessful attempts to produce a self-correcting compass. I entered warmly into the mathematical discussion of the problems which my friend's invention involved, and even contributed the mathematical portion of a little treatise which he published on the subject; but my investigations, far from encouraging me to expect success, led to this conclusion, that although an instrument might be constructed which was free from error in a given latitude and a given magnetic condition of the ship, yet, to construct one which should be free from error in different latitudes and different magnetic conditions was an absolute impossibility.

This conclusion I see no reason to doubt now, for I am not aware that a single step has yet been gained towards the production of such an instrument.

The first attempt to determine the deviations of the compass was made by Captain Flinders, who concluded that the following law would, though incorrect, be a rough approximation to the truth. In the case of wooden ships, where the deviations are small, the rule was, that the deviation is proportional to the magnetic intensity of the ship, multiplied by the sine of the magnetic azimuth of the ship's head. Had he adopted the tangent of the dip, his law would have more nearly represented the truth. Captain Flinders also pointed out that the deviations might be corrected by means of a bar of soft iron, so placed as to produce exactly the opposite effect to that which the ship's iron produced.

The subject was subsequently discussed by Dr. Scoresby and Captain Sabine, whose papers are in the Philosophical Transactions for 1819; neither of them, however, arrived at any accurate expression for the deviation, though both made considerable insight into the laws by which it is governed.

In the year 1820 Dr. Young published a mathematical investigation of the effect produced on the compass by the permanent magnetism of a ship, and in 1821 he published his "Essay on Magnetic Attraction," in which he investigated the effect produced on the compass by the induced magnetism of the soft iron in the ship, so placed as to produce exactly the opposite effect to that which the ship's iron produced.

The attempt proved a failure; for although a place could easily be found in which a plate of soft iron would produce in all portions of the ship the same effect as the soft iron in the ship, yet, to place it so as to produce exactly the opposite effect to that which the ship's iron produced was an absolute impossibility.

This method, though theoretically correct as far as it goes, must be somewhat inconvenient in practice, and I am not aware that it has been employed to any great extent.

I have now at present either Dr. Young's or Mr. Barlow's papers at my command, but as far as my memory serves me I believe that Dr. Young's investigations relate only to the permanent, and Mr. Barlow's only to the induced magnetism of the iron on board, in which case both must be considered imperfect.

In 1824, Poisson wrote two papers on the subject, and a third in 1839, which were published in the 6th and 7th volumes of the "Mémoires de l'Institut." These papers contain a full discussion of the subject of induced magnetism, and point out a method of determining its exact character by means of experiments on board ship, the soft iron being supposed symmetrically distributed; here, too, one important cause of the deviations is neglected, namely, Permanent Magnetism. Mr. Archibald Smith, who has recently edited a narrative of Dr. Scoresby's voyage to Australia, and contributed an introduction, from which I have borrowed largely in this paper, extended Poisson's method of investigation to those cases in which the iron is unsymmetrically situated, and is partly hard and partly soft; thus giving what appears to have been the first complete and accurate solution of the problem in the form in which it usually presents itself.

Mr. Smith's results were published by the Admiralty in two pamphlets—"Practical rules for ascertaining the deviations of the compass," and "Instructions for the computation of a table of the deviation of a ship's compass."

In 1839 Mr. Airy read to the Royal Society a paper giving an account of experiments on iron-built ships, for the purpose of ascertaining the correction for the deviations of the compass. In this paper I think our president took an active part. This paper contains an investigation—First, of the effects produced by induced magnetism alone; and second, by induced and permanent magnetism combined. The method adopted is perfectly correct, and, as far as Poisson's, but Mr. Airy is of opinion that it leads practically to the same results. This opinion is certainly questionable, but it having been discussed by mathematicians of higher standing than myself, I do not feel called upon to give a decided opinion on the subject.

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place, the constants on which the deviation depends may be determined; that the effect of the permanent magnetism of the ship may be counteracted by permanent magnets, and the effect of induced magnetism by a mass of soft iron; that the deviations may be determined accurately do away with the deviation in different latitudes, but that the uncorrected deviation will be so small as to be unimportant. In the interval between Mr. Airy's papers of 1839 and 1855 occurred a controversy between him and Dr. Scoresby, which Dr. Scoresby contended that Mr. Airy had erred in limiting the iron in a ship to two kinds: soft iron, susceptible only of transient induced magnetism, and iron in a permanently magnetic state; whereas a great part of the iron would be in an intermediate state, neither quite soft nor permanently magnetic, in consequence of which its magnetism would undergo continual gradual changes, from the impact of waves on the ship, from changes in the intensity and direction of the earth's magnetism in different latitudes, and even from changes in the direction of the ship's head.

The controversy thus raised was not so much a question of principles or mathematical correctness as of quantity; Mr. Airy believing that the changes in the ship's magnetism would not be so great as Dr. Scoresby was disposed to maintain.

With a view to the experimental determination of this disputed point, Dr. Scoresby undertook his voyage to Melbourne in 1856, in the Royal Charter. The ship was swung at Liverpool, and her compasses adjusted, and deviation accounted for, in the interval between her departure and her return to Liverpool, when it was found that the compass deviations had undergone very great changes, amounting in some cases to as much as two points; whence it appears that the changes produced during a long voyage in the ship's retentive or (as Mr. Airy calls it) supermagnetic magnetism, had been very much undervalued.

I appended a table of the deviations of the adjusted steering compass at Liverpool, in January, 1856, as extracted from Dr. Scoresby's narrative:—

Direction of ship's head.	Deviation.	Direction of ship's head.	Deviation.
Jan. 1856.	Aug. 1856.	Jan. 1856.	Aug. 1856.
N. by E. 30°	10° 30'	S. by E. 30°	10° 30'
N. by E. 45°	15° 45'	S. by E. 45°	15° 45'
N. by E. 60°	21° 00'	S. by E. 60°	21° 00'
N. by E. 75°	26° 15'	S. by E. 75°	26° 15'
N. by E. 90°	31° 30'	S. by E. 90°	31° 30'
N. by E. 105°	36° 45'	S. by E. 105°	36° 45'
N. by E. 120°	42° 00'	S. by E. 120°	42° 00'
N. by E. 135°	47° 15'	S. by E. 135°	47° 15'
N. by E. 150°	52° 30'	S. by E. 150°	52° 30'
N. by E. 165°	57° 45'	S. by E. 165°	57° 45'
N. by E. 180°	63° 00'	S. by E. 180°	63° 00'
N. by E. 195°	68° 15'	S. by E. 195°	68° 15'
N. by E. 210°	73° 30'	S. by E. 210°	73° 30'
N. by E. 225°	78° 45'	S. by E. 225°	78° 45'
N. by E. 240°	84° 00'	S. by E. 240°	84° 00'
N. by E. 255°	89° 15'	S. by E. 255°	89° 15'
N. by E. 270°	94° 30'	S. by E. 270°	94° 30'
N. by E. 285°	99° 45'	S. by E. 285°	99° 45'
N. by E. 300°	105° 00'	S. by E. 300°	105° 00'
N. by E. 315°	110° 15'	S. by E. 315°	110° 15'
N. by E. 330°	115° 30'	S. by E. 330°	115° 30'
N. by E. 345°	120° 45'	S. by E. 345°	120° 45'
N. by E. 360°	126° 00'	S. by E. 360°	126° 00'

This table alone shows that Dr. Scoresby's investigations were so far successful as to prove that compasses in iron ships, however well adjusted, cannot be relied on during a long voyage, and so the matter rests for the present.

Having thus pointed out the principal steps by which the theory of compass deviations has arrived at its present state, I will next endeavour to explain as clearly as I can what is the theory in what I believe to be its full development.

The iron in a ship may be divided under three classes: soft iron, incapable of retaining magnetism; hard iron or steel, which is all more or less permanently magnetic; and iron in an intermediate state, hammered or rolled, capable of retaining magnetism for a time, but which loses it when the hammering, though gradual, changes, from changes in the position of the ship, or from the blows and straining to which it is subjected in the course of the voyage. The magnetism of this last class has been called "retentive" and "supermagnetic" magnetism, and is of the first-class "transient" and "induced" magnetism.

The nature of the action of soft iron is as follows:—Every particle of soft iron, if alone, would become a magnet by the influence of the earth's magnetism; its poles lying in the direction of the dipping needle; but where the iron occurs in masses, the magnetic state of each particle is modified by that of the particles around it, so that the effect of the whole cannot be regarded as equivalent to that of a collection of simple independent magnets, except in certain particular cases, such as homogeneous spherical masses or shells. The retentive attraction, however, of masses of soft iron, taking into account the influence of the earth's magnetism, has been expressed in a perfectly accurate mathematical form, and the deviation of a compass influenced by them is expressed in a series of terms involving the sine and cosine of the magnetic azimuth of the ship's head, the co-efficients of which depend on the quantity and direction of the earth's magnetism, which can be determined experimentally, and the quantity and arrangement of the iron.

The value of these co-efficients may be determined very approximately by the process of swinging ships; for by that process the deviation of the compass is obtained in a great number of different positions, and thus a number of equations are formed in which the only unknown quantities are the co-efficients required.

Could the observations be made with perfect accuracy it would be necessary only to examine as many positions as there are co-efficients to be determined; but as perfect accuracy cannot be expected in compass observations, it is usual to make use of a much larger number of equations, and by the method of least squares to determine the values of the co-efficients. This being done the whole of the circumstances affecting the deviation might be considered as known, and the deviation itself might be corrected for all positions and latitudes by the proper location of fixed masses of soft iron, or by the use of permanent magnets.

Again, if we consider the effect of permanent magnetism alone, we find that this also can be accurately expressed in terms of the intensity and position of the permanent magnets, and the direction of the ship's head. The value of the constants in these terms could be easily determined by swinging ships, and the deviation corrected by two magnets properly placed. Thus it appears that the effects of soft iron and of permanent magnetism iron occurring separately could be easily obtained.

Where, however, the two kinds occur together, there is much more difficulty. In this case also the deviation can be expressed in terms of the sines and cosines of the magnetic azimuth of the ship's head, and the value of the constants in these terms can be determined by swinging ships. But unfortunately one of the co-efficients is the sum of two quantities, one belonging to the permanent magnetism, and the other belonging to the induced magnetism of the ship. The magnetic latitude, and that, although the whole co-efficient can be obtained, yet the two parts of which it is made up cannot be determined separately; consequently no accurate determination of the permanent magnetism of the ship can be made by observations at one place, and the adjustment by masses of soft iron and permanent magnets cannot be accurately performed. It would be possible, however, to separate the terms of this troublesome co-efficient by means of two sets of observations at different places; for in that way two different values of the same co-efficient would be obtained, and the difference in the values being due only to the variable part would afford means of determining its value. Thus if A tan α x B be the form of the co-efficient A and B being constants and of the magnetic inclination, then if β be the value of the inclination at another place the co-efficient becomes A tan α x B tan β ; hence, since this difference is determined as well as the value of α and β , the value of A is known, and thence the value of B, and the problem is completely solved. The treatment of this troublesome co-efficient is the subject of the next section of this paper.

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it was permanent, and can be practically corrected, excepting always the troublesome, but, unfortunately, it is liable to so great changes in the course of a long voyage as to render such determinations and corrections almost useless. This magnetic state of iron vessels is due to the fact that the iron plates used in building the ship, or by the long continuance of the ship in one position, building or when in dock for repairs; consequently, it may be destroyed or altered in character by long-continued changes in the ship's position, by changes of magnetic latitude, and by the blows and straining encountered in a voyage, and probably more than all by being again taken into a different dock for repairs.

The magnitude of such changes is sufficiently indicated by the results of the experiments on the Royal Charter on leaving and returning to Liverpool. Here, then, we have a difficulty which no amount of care or science can overcome; a ship's compass may be most accurately adjusted before leaving port, yet on returning they may be found to have errors amounting to two points in magnitude. It is at this point that the theoretical investigation fails, not from any failure in the theory itself, but from the irregularly variable character of the subjects of the theory.

No theory can possibly anticipate the number or effect of blows which the ship receives in dock, or during a voyage. Hence it must be allowed that no adjustment of compasses, or determination of errors, can be trusted to for a considerable length of time; and we are forced to the conclusion, that in long voyages the deviations must be determined from time to time as opportunity offers, and that no man is fully competent to command an iron ship who is not conversant with the subject.

The only method of doing this is the method of observing azimuth with the compass in different directions of the ship's head. On any fine day, when it is calm or the wind is light (the morning or evening is the best time), the ship's head being in a convenient time, the observer should observe the sun's number of different positions, and the sun's azimuth observed by the compass. This being corrected by the variation, as given in the charts, and the error of the compass for that particular position, gives the error of the compass for that particular position.

If the errors are considerable, there will be two courses open; either to tabulate them and make use of them as a correction, or to adjust the compass by the method of adjusting the compass; not from inability on the part of the observer, but from the fact, simply because it is customary to entrust the matter to professional compass adjusters at the principal sea ports.

In operation, however, is tolerably simple, and practical rules have been published by authority, the help of which all that is necessary may be accomplished by a careful person of ordinary intelligence without any very deep insight into the theory on which the method is based. The

(From the Economist, August 18.)
 ... of writing nonsense, stupidity is no

Stupidity may often read amiss the realities
and it, and may draw inconsistent and illogical

[illegible]

claim should not need to be told. The teacher, who rails at political economy, would doubtless exhort socialism for the same reason, who would put an end to strikes by "the paternalistic system," and maintain high and "sufficient" wages for the "good workmen and of bad-luck" by "the good workmen and of bad-luck" system. But the teacher, who would really, if his theory and practice were adopted, reduce his wages, increase pauperism, cram the poor into crowded dwellings, and encourage the "good workmen and of bad-luck" system, to the only clear end which can put an end to the system, would be a "good workman and of bad-luck" man, in "everlastingly true," and all other measures, is false in premises, absurd in deduction, and impossible in practice."

true through all ranks of the service. Let a Court martial give an unjust sentence, and let this sentence be challenged.

"Let bygones be bygones," I must deal another death blow to system, which for the sake of the world's civilization is being laid to rest. I was giving you a few details. went with four English friends, with a special order from the Minister of Justice. These flew open so readily that the windows of the interior were like a screen of glass, and an old inspector pried us with his snuff-box. First apartments, assigned to those of *condemnation* but not so—these have been recently whitewashed but we go into the interior of the chambers, where we began to discover its many peculiarities. Many of the chambers were almost empty, very damp, so damp that a chill staid to the bones. The chambers of the *condemned* Cerberus, who was rather anxious for the honour of the house, endeavoured to give us the idea that it was not merely a lumber room; another was longer used as a storehouse. The Commissioner was useless to open it. The Commissioner closing the Criminal said, "Don't dispute it. It is a prison, but speak of them as 'depositories' of crime." Down, down, down, down, down, down, down, through the iron-plated doors of which not a ray of light came. Arrived at length at the lowest passageway. "We're up these doors," the Commissioner said. But the doors were closed, and it grated on its iron hinges. A small chamber three feet wide was visible, and then another a

longer used," he added, "see the rubbish I saw, however, in the freshness

We shall set very foolishly if we do not give indications the full degree of attention to which are entitled. The weather here has long been so bad that it is certain that the harvest will be uncertain that a great deal of damage which it is too late to repair has been sustained on the grain and potato crops. The convention can not be held, and that is what we must be prepared to do, will, under any circumstances, be decidedly the average, and that the extent of the deficit will be considerably increased, unless the conditions of the international convention are such that in which the crops are to be gathered. The fact that this country sufficiently resembles that of France to warn us to make all possible preparations to ward off the possibility of a great crop failure, and that would be serious enough were the failure confined to ourselves; but now that France is in the same position, it becomes a question of the means of doing so. The Government of France has a population of seventy millions of people. That the resources required will be obtained is, happily, already assured and the United States, to say nothing of the resources of the world, together, are able to produce the large yield already mentioned. It is necessary for France and Great Britain. It is

of one large buyer, there are now two. The abolition of the corn duty in France constitutes

lessening the wages paid to the workmen, they are really receiving the same profit as now, in an extended number of watches sold. For we find that the remuneration is so small, they do not turn their children to the trade so formerly; and consequently leave it for gas-fitting and clock-making, where they can get their right wages. The remarks will have the desired effect, as watchmakers to the perils before them, as well as will by the aid of improvements, and machine tools, which has lately been made substantially.

Spectator.

CONSOLATION FOR THE FAT.—To be a fat man is great element of success in London. It is the willing to pay himself well, you find in a fat man. So if you are stout, you will find it all the more to your advantage. How much consolation from his mouth, as though they were George III. used to receive such consolations. He will smile blandly at you, over a vast white waistcoat, and impart to the glass waiter, who is slipping the force of a syllable on his tongue, the words "I am very fat."

as an ill-conditioned fellow, deaf to reason. Let every one who can contrive

[illegible]

voice of	337, 29 tons	...	345	Tan, 611 pas
fat and	Hides, 335	...	100	Timber, 17,7
	Horses, 9	...	365	Vestas, 1 one

...	3546
packings	180
...	25
...	50
...	700
...	87
...	39
phages	371
...	14
ade	120
...	6
...	14
...	5
...	180
...	30
tail, 3	37
...	1
mode, 1	5
...	37
...	295
...	5
ade, 1	212
...	371
...	56
se	200
...	140
...	35
pack	261
50 pack-	400
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et	250
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Canada, 61	...
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APPLS.—
 a most ex-
 have been
 at condition.
 his delicious
 which are the
 is, but more
 The firm of
 Yard, alone
 where in the
 at sixpence
 will last till
 a time it is
 500 will be

the Yorkshire
 Thursday last,

class, a black and a brown. The prize was awarded to the black. Mr. Phillips, the celebrated London horse-dealer, bought both horses, giving for the winner £60, and £110 for the loser.—*Leeds Mercury*.

in the hands of the magistrates. It was then
 decided that the magistrates should address a letter
 to the Colonial Secretary, as previously stated, and
 matter dropped. — *Maitland Ensign of Saturday.*

PLAN FOR LAMING FLAT DISTRICTS.—Last week a Yass
 river loaded drays with property to the amount of £1000
 and some £100 worth of the goods was for the supply of
 the Laming Flat. — *Yass Courier.*

mindful woman, gave out from the desk, that "at the school in first district, a few will attempt to grow."

COMPLIMENTARY!—VERY!—Quilp and his wife had a bit of contention the other day. "I own you have more brilliancy than I," said the woman, "but I have the better judgment." "Yes," said Quilp, "our choice in marriage shows that." Quilp was informed that he was a brute."

of the previous committee to which a vote of thanks was passed, was omitted in our report of Saturday.

amazed in Norwich when Mrs. Alice Day, of that city, was lately delivered of four sturdy boys!—Because we know not what a day may bring forth.

back and say the commencement of this state of affairs took place under the Government of Messrs. Charles Cowper and Co., the administration which called itself the popular Government.

would like never becomes vacant, and when they are appointed to preach upon some important occasion it happens that the ground is a foot deep with snow.

<http://nla.gov.au/nla.news-page1487636>

and Spirit Merchants, Publicans, and the Trade generally.
 ant Sale of Choice Wines, Spirits, and favourite
 brands of Ale and Porter, in glass and wood.
 WEDNESDAY, 7th November.
 Preliminary announcement.
 E. THRELKELD and CO. will sell by
 auction, on above day, at 11 o'clock,
 several choice consignments of wine,
 Pale and dark brandy, fine, medium, and common
 Rum, high and low strength

Whisky, in quarter-casks and cases
Geneva, key and growing cork
Old tom, in quarter-casks and cases
Ale and porter
Assorted liquours

Terms at sale.

COUGER.

23 Allotments.
Close to the Hotel.
Immaculate. See also page 100.

ESSRS. W. DEAN AND CO. will sell by auction, at their Warehouse, Pitt and Bell streets, on **TUESDAY, 6th November**, at half-past twelve o'clock, choice allotments of land, at Coobera, a very short distance from the beach and the Hotel, as follows:

to 6—6 allotments with frontages of 55 feet each

to Brook-street, by a depth of 132 feet

7—Corner allotment, frontage of 105 feet to Brook-street, and 61 feet to Peronne-street

8—61 feet frontage to Peronne-street, and 105 feet to Victoria-street

9 to 11—3 allotments, each with frontage of 75 feet to Brook-street, and 75 feet to Victoria-street, 132 feet depth

12 to 14—3 allotments, with frontage of 75 feet each to Victoria-street, depth 132 feet

15—61 feet frontage to Peronne-street, 105 feet depth

depth of 105 feet.
 16—61 feet frontage to Perouse-street, by 105 feet to Victoria-street.
 17—132 feet frontage to Dudley-street, and 55 to Arden-street.
 8 to 21—4 allotments, each 55 feet frontage to Arden-street, by a depth of 132 feet.
 22—55 feet frontage to Arden-street, by 122 to Perouse-street.
 23—66 feet frontage to Perouse-street, by a depth of 230 feet.
 Terms, liberal, at sale.
 For Imperative Sale.

ESSRS. W. DEAN AND CO. will sell by auction, on **TUESDAY, 6th November**, at **12 o'clock**, the extensive premises comprising the **Royal Hotel** (now in full trade), also with extensive stabling, 50 feet by 34 feet, and a shop, with brick ovens and cottages attached; a large store suitable for the hay and corn trade, or general store; also a number of outhouses, the whole comprising an acre of ground. In the best position of the town, being on the main road to Braidwood and to the Pillawarra River.

Wharf, and having frontage to Reid-street, Brindwood-street, and Murray-street.

Hotel contains large cellar. Kitchen, bar, out-porch, seven bedrooms, eight flat verandas; the verandas are shaded, the roof is covered with corrugated iron, the store is also shaded.

Premises are now let to a respectable tenant on lease years at £125 per annum. Also, thirteen allotments in the township, as per plan.

Title, grant direct from the Crown.

Value of this property cannot be too highly estimated, being situated in the best position in the town of Melbourne, on the shortest and direct road to Kew, and

ESSEES, W. DEAN AND CO. will sell by auction, at their Warehouse, Pitt and O'Connell streets, on WEDNESDAY, 4th November, at 10 o'clock, a large business, which must necessarily greatly increase with the traffic to the Snowy River Gold-fields, and the facilities on the line for a profitable investment in the sale of this property (politically without reserve) an opportunity rarely to be met with. Immediately after the above, will be sold nine allotments of land, at Coogee.

Terms, liberal, at sale.

To Drapers and others.

3 the slightest reserve,
 3 cones summer slope,
 5 ditto brilliant prints, white grounds
 4 ditto printed muslins
 3 ditto balisornes.

Terms at sale.

arehousemen, Drapers, storekeepers, Milliners,
 Hatters, and others.

220 Packages of New and Seasonable Goods,
 Ex Ware of Life, Jason, Lechiel, &c.

Auction Sale, on WEDNESDAY, 6th November.

ESSRS. W. DEAN AND CO. have received instructions from the importers, J. Montefiore, Graham, and Co., to sell by auction, at their Warehouses, Pitt and O'Connell streets, on FRIDAY, 6th November, at 11 o'clock prompt, packages new and seasonable goods, as *Wares of* *assess, Lochiel, &c., &c.*

7-8 fancy light prints
Flounced muslin robes
Black alpaca, coloured ditto
Black gros and glace
Checked silk robes, 7 flosses

Dittie, 5 ditto
 Silk and lince mantles
 Cambric jackets
 Muslin lince
 Brown bolinas
 White and coloured counterpanes
 Coloured and white mosquito net
 Ladies' straw and crinoline hats
 Millinery, bonnets, and hats
 Longcloth shirts, lince fronts, collars and bands
 Scotch twill regatta ditto
 Faxon and pica-dilly ditto
 Men's, boys', and youths' mole trousers

Light fancy does and twen rids
Black and coloured silken and cash aces
Fancy does make uppers and black cloth ditto
Silk, mohair, tweed, and fancy vests
Women's and men's brown cotton hainery
Gents' black paris hats
Gents' light drab felt ditto, ventilead
Gents' brown and grey crimpole ditto.
Terms at sale.

important to Merchants, Tea Dealers, Grocers,
Shippers, and others.
Positive Unreserved Clearance Sale.
The balance of the cargo of finest selected Oongus Tea.

Ex C. E. Tilton, from Foochow.

THURSDAY, 8th November.

MESSRS. W. DEAN and CO. have received instructions from the importers, Messrs. Brown and Co, to sell by auction, at their Warehouse, Pitt and O'Connell streets, on **THURSDAY, 8th November**, at 11 o'clock,

Positively without reserve,
balance of the cargo of tea, ex C. E. Tilton, from Foochow, as hereunder, including many of the finest choicest well-known shipment:—

LaCo in diamond, BaCo over.

130 half-chests finest Kalsow congon
74 ditto ditto ditto
61 ditto fine congon
42 chests superior Kalsow congon
157 ditto ditto ditto
25 half-chests ditto ditto ditto
415 boxes very superior ditto ditto
170 half-chests fine congon
195 ditto ditto ditto
496 boxes very fine Kalsow congon
50 ditto finest ditto ditto

1864 half-chest ditto ditto ditto
 187 chests fine ditto ditto
 33 half-chests ditto ditto
 480 boxes very superior ditto ditto
 176 half-chests fine congon.
 8 in diamond.
 1899 half-chests superior Kalow congon
 28 chests ditto ditto ditto
 110 ditto ditto ditto ditto.
 Terms, liberal. at sale.
 Cordill Manufacturing, Unfractioners, Grocers, &c.
 Leaf Sugar.

For Positive Sale, to Close a Shipment.

ESSRS. W. DEAN AND CO. will sell by
auction, at their Warehouse, Pitt and O'Con-
nors, on **THURSDAY, 8th November, at 11**
o'clock

To close a shipment,
27 casks leaf sugar,
Terms at sale.

Groceries and Oilmen's Stores.

Wholesale Grocers, Shippers, Storekeepers, and others.

Auction Sale, THURSDAY, 6th November.
MESSRS. W. DEAN and CO. will sell by
 auction, at their Warehouse, Pitt and O'Connell
 streets, on **THURSDAY, 6th November, at 11**
 o'clock, a large quantity of
 every article in groceries, oilman's stores, &c.
 Terms at sale.

SALES BY AUCTION.

THIS DAY, 5th NOVEMBER.

SALE BY PUBLIC AUCTION, of City, Suburban, and Country Properties, at the Rooms, Bank-buildings, George-street, at 11 o'clock, on FRIDAY, 11th November, 1860.

BOURKE-STREET, BURRY HILLS. House No. 353, Bourke-street, nearly opposite the Wesleyan Chapel; two blocks of land of Bourke-street, opposite the Wesleyan Chapel.

CLEVELAND-STREET. Two dwelling-houses, Nos. 48 and 49, at the corner of Bourke-street, opposite the Wesleyan Chapel.

PYRMONT. By order of the mortgagee, cottage, No. 22, Bowman-lane, known as Captain Brock's property, and two stone-built uninhabited houses in Mill-street.

KINGSTON, NEWTOWN. Allotment in Wellington-street.

WOLLONGONG. Half-acre allotment in Barrell-street.

HAWKESBURY RIVER. 30-acre farm on the Oatley Creek.

RICHARDSON and WRENCH.

CATALAN UREKA.

HAWKESBURY RIVER.

30-acre farm, about six miles from Windsor, fronting the above creek.

RICHARDSON and WRENCH have received instructions to sell by public auction, at the Rooms, Bank-buildings, George-street, THIS DAY, 5th November, at 11 o'clock.

All that piece of land situated at Oatley Creek, bounded on the west by a line 15 chains, on the north by a line 15 chains 60 links, on the east by a line 25 chains 60 links; and thence by Oatley Creek to the point of commencement, being the land sold as Lot 4, in pursuance of advertisement 10th August, 1840. Plan on view at the Rooms.

FOR ABSOLUTE SALE.

By order of the Devises of the late Mr. Joseph Marston.

BURRY HILLS, SYDNEY.

Two blocks of land of Bourke-street, opposite Mr. Baptista's garden.

TOWN OF WOLLONGONG.

Half-acre allotment, No. 15, fronting Barrell-street.

RICHARDSON and WRENCH have received instructions to sell by public auction, at the Rooms, Bank-buildings, George-street, THIS DAY, 5th November, at 11 o'clock.

The following freehold properties:

Lot 1. All that allotment of land, commencing 113 feet to the eastward of Bourke-street, and bounded by a reserved road of 144 feet, with a depth of 140 feet.

Lot 2. All that allotment of land adjoining lot 1, having similar frontage and depth.

These blocks of land are portions of a grant to the late E. S. Hall.

They are pleasantly situated, about opposite Mr. Baptista's garden, front two well-situated, elevated, healthy building sites.

TOWN OF WOLLONGONG.

Lot 3. Allotment No. 15, containing two acres, having a frontage of 66 feet to Barrell-street, with a depth of 330 feet.

The whole of the above land is positively sold on the above date. Plans on view at the Rooms, where further information may be obtained.

For particulars of title apply to H. R. BRADLEY, Esq., solicitor, Macquarie-street.

POSITIVE SALE.

By order of the mortgagee.

MILL-STREET, PYRMONT.

Allotment of land, and two stone-built houses in an unfinished state.

RICHARDSON and WRENCH have received instructions to sell by public auction, at the Rooms, Bank-buildings, George-street, THIS DAY, 5th November, at 11 o'clock.

All that allotment of land, being lot 7 of block A of the late Mr. W. S. Pyrmont Estate, having a frontage of 264 feet to Mill-street, on which are erected TWO SUBSTANTIALLY BUILT STONE HOUSES, containing each four rooms, verandah, and are very strong built. The situation is about one of the best in Pyrmont, and but a short distance from the ferry to Glebe Island.

Plan on view at the Rooms.

TOWN OF WOLLONGONG.

Lot 4. Allotment No. 15, containing two acres, having a frontage of 66 feet to Barrell-street, with a depth of 330 feet.

The whole of the above land is positively sold on the above date. Plans on view at the Rooms, where further information may be obtained.

For particulars of title apply to H. R. BRADLEY, Esq., solicitor, Macquarie-street.

POSITIVE SALE.

By order of the mortgagee.

MILL-STREET, PYRMONT.

Allotment of land, and two stone-built houses in an unfinished state.

RICHARDSON and WRENCH have received instructions to sell by public auction, at the Rooms, Bank-buildings, George-street, THIS DAY, 5th November, at 11 o'clock.

The above described small leasehold property, subject to a merely nominal ground rent.

The situation of the above property is very desirable, and is especially directed to the above, as the mortgagee's instructions are positive to effect a sale on the date mentioned.

BOURKE-STREET, BURRY HILLS.

CAPITAL FOUR-ROOMED HOUSE, No. 353, Bourke-street, and a SUBSTANTIAL VERANDAH COTTAGE adjoining, being No. 354, Little Bourke-street, nearly opposite the Wesleyan Chapel.

For Positive Sale.

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BOURKE-STREET, BURRY HILLS.

Preliminary Notice.

By order of Messrs. J. G. Moore and Co.

On WEDNESDAY, the 7th, and THURSDAY, the 8th, at 11 o'clock each day.

MESSRS. CHAS. MOORE and CO.

have received instructions from Messrs. Ray, Glanville, and Co., to close the remaining portion of their stock, on the above days, at their Premises, Market-street.

Further particulars in Tuesday's issue.

Terms, liberal.

Boots and Shoes.

To Boot and Shoe Buyers, Country Storekeepers, Shipkeepers, and others.

35 Trunk and Trunk-makers.

Now landing, ex Wave of Life.

From the first-class manufacturers, H. A. Hyde and Co. Without reserve.

For Auction Sale, MONDAY next, the 5th instant.

PEEK and POTHERINGHAM have received instructions from the importers to sell by auction, at their Rooms, 309, George-street, THIS DAY, the 5th instant, at 11 o'clock prompt.

55 trunks, reasonable goods.

Consisting of:

Women's black cashmere pumps

Ditto ditto, colored cashmere boots, new ris.

Ditto ditto, colored cashmere boots, new ris.

Ditto ditto, colored cashmere boots, new ris.

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Preliminary Notice.

By order of Messrs. J. G. Moore and Co.

On WEDNESDAY, the 7th, and THURSDAY, the 8th, at 11 o'clock each day.

MESSRS. CHAS. MOORE and CO.

have received instructions from Messrs. Ray, Glanville, and Co., to close the remaining portion of their stock, on the above days, at their Premises, Market-street.

Further particulars in Tuesday's issue.

Terms, liberal.

Boots and Shoes.

To Boot and Shoe Buyers, Country Storekeepers, Shipkeepers, and others.

35 Trunk and Trunk-makers.

Now landing, ex Wave of Life.

From the first-class manufacturers, H. A. Hyde and Co. Without reserve.

For Auction Sale, MONDAY next, the 5th instant.

PEEK and POTHERINGHAM have received instructions from the importers to sell by auction, at their Rooms, 309, George-street, THIS DAY, the 5th instant, at 11 o'clock prompt.

55 trunks, reasonable goods.

Consisting of:

Women's black cashmere pumps

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by Coleridge; refigured by Deane; the late Lord George Gordon Byron's "The Corsair," which was the first of his poems published after his death; and the late Lord George Gordon Byron's "The Corsair," which was the first of his poems published after his death.

For pedigree vide "Red Book," vol. p. 10, page 10, under the heading "PATENTED." See also "The Red Book," vol. p. 10, page 10, under the heading "PATENTED."

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